

**Appendix J**

**TENTATIVE RESOLUTION NO. R9-2006-0075**

**AND**

**ATTACHMENT A**

**AMENDMENT TO THE WATER QUALITY CONTROL PLAN  
FOR THE SAN DIEGO BASIN (9) TO INCORPORATE  
TOTAL MAXIMUM DAILY LOADS FOR DISSOLVED  
COPPER, LEAD AND ZINC IN CHOLLAS CREEK,  
TRIBUTARY TO SAN DIEGO BAY,**

**AND TO REVISE THE TOXIC POLLUTANTS SECTION OF  
CHAPTER 3 TO REFERENCE THE  
CALIFORNIA TOXICS RULE**

**California Regional Water Quality Control Board  
San Diego Region**

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN DIEGO REGION**

**TENTATIVE  
RESOLUTION NO. R9-2006-0075**

**A RESOLUTION ADOPTING AN AMENDMENT TO THE WATER QUALITY  
CONTROL PLAN FOR THE SAN DIEGO BASIN (9) TO INCORPORATE  
TOTAL MAXIMUM DAILY LOADS FOR DISSOLVED COPPER,  
LEAD, AND ZINC IN CHOLLAS CREEK, TRIBUTARY  
TO SAN DIEGO BAY,**

**AND TO REVISE THE TOXIC POLLUTANTS SECTION OF CHAPTER 3 TO  
REFERENCE THE CALIFORNIA TOXICS RULE**

**WHEREAS**, The San Diego Regional Water Quality Control Board (hereinafter, San Diego Water Board), finds that:

1. **BASIN PLAN AMENDMENT:** Total Maximum Daily Loads (TMDLs) and allocations for pollutants that exceed water quality objectives in waterbodies that do not meet water quality standards under the conditions set forth in section 303(d) of the Clean Water Act [33 U.S.C. 1250, *et seq.*, at 1313(d)] (“Water Quality Limited Segments”) should be incorporated into the Regional Water Quality Control Plan for the San Diego Region (Basin Plan) pursuant to Article 3, commencing with section 13240, of Chapter 4 of the Porter-Cologne Water Quality Control Act, as amended, codified in Division 7, commencing with section 13000, of the Water Code.
2. **CLEAN WATER ACT SECTION 303(d):** The lowest 1.2 miles of Chollas Creek (from the mouth of Chollas Creek at San Diego Bay to 1.2 miles inland) were placed on the List of Water Quality Limited Segments in 1996 due to levels of dissolved copper, lead, and zinc (metals) in the water column that exceeded numeric water quality objectives for copper, lead, and zinc, and narrative water quality objectives for toxicity, as required by Clean Water Act (CWA) section 303(d).
3. **BENEFICIAL USE IMPAIRMENTS:** Two beneficial uses exist in Chollas Creek that are sensitive to, and subject to impairment by elevated concentrations of dissolved metals in the water column. Warm Freshwater Habitat (WARM) and Wildlife Habitat (WILD) require water quality suitable for the protection of aquatic life and aquatic dependent wildlife. The water quality necessary to support the WARM and WILD beneficial uses of Chollas Creek is, or may be, unreasonably impaired due to elevated levels of dissolved copper, lead, and zinc.
4. **NECESSITY STANDARD** [Government Code section 11353(b)]: Amendment of the Basin Plan to establish and implement TMDLs for Chollas Creek is necessary because the existing water quality in the lowest 1.2 miles of Chollas Creek does not meet applicable

water quality objectives for copper, lead, zinc, or toxicity. CWA section 303(d) requires the establishment and implementation of TMDLs under the conditions that exist in Chollas Creek. TMDLs for copper, lead and zinc are necessary to ensure attainment of applicable water quality objectives and restoration of water quality needed to support the beneficial uses designated for Chollas Creek.

5. **WATER QUALITY OBJECTIVES:** The United States Environmental Protection Agency (USEPA) has established numeric criteria for toxic pollutants which are applicable water quality objectives for dissolved copper, lead, and zinc in the inland surface waters, enclosed bays, and estuaries of California through promulgation of the California Toxics Rule (CTR). [40 CFR 131.38]. These water quality objectives, presented below, are applicable to Chollas Creek.

*Water Quality Objectives for dissolved metals in Chollas Creek.*

<b>Metal</b>	<b>Numeric Target for Acute Conditions: Criteria Maximum Concentration</b>	<b>Numeric Target for Chronic Conditions: Criteria Continuous Concentration</b>
Copper	$(1) * (0.96) * \{e^{[0.9422 * \ln(\text{hardness}) - 1.700]}\}$	$(1) * (0.96) * \{e^{[0.8545 * \ln(\text{hardness}) - 1.702]}\}$
Lead	$(1) * \{1.46203 - [0.145712 * \ln(\text{hardness})]\} * \{e^{[1.273 * \ln(\text{hardness}) - 1.460]}\}$	$(1) * \{1.46203 - [0.145712 * \ln(\text{hardness})]\} * \{e^{[1.273 * \ln(\text{hardness}) - 4.705]}\}$
Zinc	$(1) * (0.978) * \{e^{[0.8473 * \ln(\text{hardness}) + 0.884]}\}$	$(1) * (0.986) * \{e^{[0.8473 * \ln(\text{hardness}) + 0.884]}\}$

Hardness is expressed as milligrams per liter.

Calculated concentrations should have two significant figures [40 CFR 131.38(b)(2)].

The natural log and exponential functions are represented as “ln” and “e,” respectively.

In addition, the Basin Plan establishes the following narrative water quality objective for “toxicity” to ensure the protection of the WARM and WILD beneficial uses.

**Toxicity Objective:** *All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life. Compliance with this objective will be determined by use of indicator organisms, analyses of species diversity, population density, growth anomalies, bioassays of appropriate duration, or other appropriate methods as specified by the San Diego Water Board.*

*The survival of aquatic life in surface waters subjected to a waste discharge or other controllable water factors, shall not be less than that for the same water body in areas unaffected by the waste discharge or, when necessary, for other control water that is consistent with requirements specified in USEPA, State Water Resources Control Board (State Board) or other protocol authorized by the San Diego Water Board. As a minimum, compliance with this objective as stated in the previous sentence shall be evaluated with a 96-hour acute bioassay.*

*In addition, effluent limits based upon acute bioassays of effluents will be prescribed where appropriate, additional numerical receiving water objectives for specific toxicants will be established as sufficient data become available, and source control of toxic substances will be encouraged.*

6. **NUMERIC TARGETS:** Numeric targets in TMDLs interpret and implement numeric and narrative water quality objectives and are established at levels necessary to achieve water quality objectives. Attainment of numeric targets for copper, lead and zinc in Chollas Creek must ensure attainment of both the numeric and narrative water quality objectives cited in Finding 5. Numeric targets equal to the water quality objectives cited in Finding 5 will result in attainment of water quality objectives and compliance with water quality standards in Chollas Creek.
7. **SOURCES OF DISSOLVED METALS:** Many land uses and activities associated with urbanization are sources of copper, lead, and zinc to Chollas Creek. Freeways and commercial/ industrial land uses are major contributors. Automobiles are a significant source of all three metals. Water supply systems, pesticides, industrial metal recyclers and other industrial activities also contribute to levels of copper, lead, and zinc in excess of water quality objectives for Chollas Creek. Metals released to the environment by different land uses and activities are washed off of the land surface by urban runoff and storm flows and conveyed to Chollas Creek through municipal separate storm sewer systems.
8. **WATER QUALITY OBJECTIVE VIOLATIONS:** Concentrations of dissolved copper, lead, and zinc have frequently exceeded numeric water quality objectives contained in the CTR. Furthermore, in a Toxicity Identification Evaluation performed in 1999, Chollas Creek stormwater concentrations of zinc and to a lesser extent copper, were identified as causing or contributing to reduced fertility in the purple sea urchin.
9. **ADVERSE EFFECTS OF COPPER, LEAD, AND ZINC:** Concentrations of copper, lead, and zinc in excess of CTR criteria entail increased risk of adverse effects in aquatic organisms exposed to them. Copper, lead, and zinc may bioaccumulate within lower organisms, however they do not biomagnify up the food chain. Of these three metals, copper is considered the most potent toxin at environmentally relevant aqueous concentrations.
10. **TOTAL MAXIMUM DAILY LOADS AND ALLOCATIONS:** The assimilative or loading capacity of Chollas Creek for dissolved copper, lead, and zinc is defined as the maximum amount of each pollutant that Chollas Creek can assimilate and still attain water quality objectives needed for the protection of designated beneficial uses. The TMDLs are concentration based, therefore, the allocations are not additive. The TMDLs include an explicit 10 percent margin of safety (MOS) that takes into account any uncertainties in the TMDL calculation. The TMDL calculations also account for seasonal variations and critical conditions [40 Code of Federal Regulations (CFR), section 130.2(i)]. The TMDLs for dissolved copper, lead, and zinc are equal to the Waste Load Allocations (WLAs) which are 90 percent of the CTR Criteria Continuous Concentration (CCC) and Criteria Maximum Concentration (CMC) equations. Discharges of dissolved copper, lead, and zinc require significant reductions from current levels to meet the allocations.

11. **IMPLEMENTATION PLAN:** The necessary actions to implement the TMDL are described in the technical report entitled *Total Maximum Daily Loads for Dissolved Copper, Lead and Zinc in Chollas Creek, Tributary to San Diego Bay* dated [insert date]. These actions will be accomplished by the San Diego Water Board and State Water Resources Control Board (State Water Board) by issuing new WDRs or amending the existing WDRs that regulate MS4 discharges, industrial facility stormwater discharges, construction stormwater discharges and groundwater extraction discharges in the Chollas Creek watershed.
12. **COMPLIANCE MONITORING:** Water quality monitoring will be necessary to assess progress in achieving WLAs and compliance in Chollas Creek with the water quality objectives for dissolved copper, lead, and zinc.
13. **COMPLIANCE SCHEDULE:** Implementation of copper, lead and zinc wasteload reductions over a 10-year staged compliance schedule period, with no reductions for the first three years will provide a reasonable period of time for persons who will be responsible for reducing discharges of copper, lead, and zinc in the Chollas Creek watershed to develop and implement pollution prevention or control measures to achieve compliance with the TMDL.
14. **SCIENTIFIC PEER REVIEW:** The scientific basis of this TMDL has undergone external peer review pursuant to Health and Safety Code section 57004. The San Diego Water Board has considered and responded to all comments submitted by the peer review panel.
15. **STAKEHOLDER PARTICIPATION:** Interested persons and the public have had reasonable opportunity to participate in review of the proposed TMDL. Efforts to solicit public review and comment included five public workshops held between April 1999 and April 2005; a public review and comment period of 45 days preceding the San Diego Water Board public hearing; a two week extension of the comment period after the public hearing; a second public review period of 45 days, and written responses from the San Diego Water Board to oral and written comments received from the public.
16. **CEQA REQUIREMENTS:** ~~The San Diego Water Board's Basin Planning process is certified as "functionally equivalent" to the process of interdisciplinary environmental review prescribed by the California Environmental Quality Act (CEQA) and is therefore exempt from CEQA's requirements to prepare an EIR, Negative Declaration, or Initial Study. The Proposed Basin Plan amendment to establish a TMDL for Chollas Creek, the supporting technical report, and the environmental checklist prepared by the San Diego Water Board satisfy the environmental documentation requirements for Basin Planning activities. A public CEQA scoping meeting was held in March 2003.~~

~~The analysis contained in the TMDL Technical Report, the CEQA checklist, and the responses to comments comply with the requirements of the State Water Board's certified regulatory CEQA process, as set forth in the California Code of Regulations, Title 23, section 3375, et seq. Furthermore, the analysis fulfills the San Diego Water Board's obligations attendant upon the adoption of regulations "requiring the installation of pollution~~

~~control equipment, or a performance standard treatment or requirement,” as set forth in section 21159 of the Public Resources Code.~~

**CEQA REQUIREMENTS:** Pursuant to Public Resources Code section 21080.5, the Resources Agency has approved the Regional Water Boards’ basin planning process as a “certified regulatory program” that adequately satisfies the California Environmental Quality Act (CEQA) (Public Resources Code, section 21000 et seq.) requirements for preparing environmental documents. [14 CCR section 15251(g); 23 CCR section 3782] As such, the San Diego Water Board’s basin planning documents together with an Environmental Checklist are the “substitute documents” that contain the required environmental documentation under CEQA. [23 CCR section 3777] The substitute documents for this project include the Environmental Checklist, the detailed technical report entitled *Total Maximum Daily Loads for Dissolved Copper, Lead, and Zinc in Chollas Creek, Tributary to San Diego Bay*, responses to comments raised during the development of the TMDL, and this resolution. The project itself is the establishment of a TMDL for toxic metals in Chollas Creek and its tributaries. While the San Diego Water Board has no discretion to not establish a TMDL (the TMDL is required by federal law) or for determining the water quality standards applicable to Chollas Creek (the California Toxics Rule at section 131.38 of the federal NPDES regulations, 40 CFR 131.38, establishes the numeric water quality objectives that must be implemented), the San Diego Water Board does exercise discretion in assigning waste load allocations and load allocations, determining the program of implementation, and setting various milestones in achieving the numeric water quality standards established in the CTR.

17. **CEQA SCOPING MEETING:** A CEQA Scoping meeting was conducted on March 21, 2003, in the Board Room at the San Diego Water Board’s office. A notice of the CEQA Scoping meeting was sent to interested persons including cities and counties with jurisdiction in or bordering the Chollas Creek watershed.
18. **CEQA TIER 1 ENVIRONMENTAL REVIEW:** The implementation period allowed by the TMDL will allow many compliance approaches to be pursued. In preparing the accompanying CEQA substitute documents, the San Diego Water Board has considered the requirements of Public Resources Code section 21159 and California Code of Regulations, Title 14, section 15187, and intends the substitute documents to serve as a Tier 1 environmental review. Nearly all of the compliance obligations will be undertaken by public agencies that will have their own obligations under CEQA. Project level impacts will need to be considered in any subsequent environmental analysis performed by other public agencies pursuant to Public Resources Code section 21159.2. If not properly mitigated at the project level, there could be adverse environmental impacts. The substitute documents for this TMDL, and in particular the Environmental Checklist and responses to comments, identify broad mitigation approaches that should be considered at the project level. Consistent with CEQA, the substitute documents do not engage in speculation or conjecture and only consider the reasonably foreseeable environmental impacts of the methods of compliance, and the reasonably foreseeable feasible mitigation measures, which would avoid or eliminate the identified impacts.

19. **CEQA OVERRIDING CONSIDERATION:** The proposed amendment to the Basin Plan to establish TMDLs for Metals in Chollas Creek could have a significant adverse effect on the environment. However, there are feasible mitigation measures that would substantially lessen any significant adverse impact. The public agencies responsible for implementation measures needed to comply with the TMDL can and should incorporate such mitigation into any projects or project approvals that they undertake for the Chollas Creek watershed. Possible mitigation is described in the CEQA substitute documents, specifically the TMDL Technical Report and the Environmental Checklist. To the extent the mitigation measures are not deemed feasible by those agencies, the necessity of implementing the TMDLs that are mandated by the federal Clean Water Act and removing the metals-related toxicity impairment from Chollas Creek (an action required to achieve the express, national policy of the Clean Water Act) outweigh the unavoidable adverse environmental effects identified in the substitute documents.
20. **ECONOMIC ANALYSIS:** The San Diego Water Board has considered the costs of the reasonably foreseeable methods of compliance with the wasteload reductions specified in this TMDL.
21. **DE MINIMUS ENVIRONMENTAL EFFECTS:** This Basin Plan amendment will result in no potential for adverse effect, either individually or cumulatively, on wildlife.
22. **PUBLIC NOTICE:** The San Diego Water Board has notified all known interested persons and the public of its intent to consider adoption of this Basin Plan amendment in accordance with Water Code section 13244.
23. **PUBLIC HEARING:** The San Diego Water Board has considered all comments pertaining to this Basin Plan amendment submitted to the San Diego Water Board in writing, or by oral presentations at the public hearing held on May 11, 2005. Detailed responses to relevant comments have been incorporated into Appendix M of the Technical Report approved by this Resolution.
24. **REVISION TO BASIN PLAN:** The USEPA promulgated a final rule prescribing water quality criteria for toxic pollutants in inland surface waters, enclosed bays, and estuaries in California in 2001 (The California Toxics Rule or “CTR;” [40 CFR 131.38]). CTR criteria constitute applicable water quality objectives in California. In addition to the CTR, certain criteria for toxic pollutants in the National Toxics Rule [40 CFR 131.36] constitute applicable water quality objectives in California as well. The section in Chapter 3 of the Basin Plan titled “Toxic Pollutants” should be revised to be consistent with the current federal rules. The subsection entitled “Water Quality Objectives for Toxic Pollutants” in Chapter 3 of the Basin Plan needs to be deleted. This subsection is redundant since the CTR and certain NTR criteria constitute applicable water quality objectives in California.

**NOW, THEREFORE, BE IT RESOLVED** that

1. **AMENDMENT ADOPTION:** The San Diego Water Board hereby adopts the amendment to the Basin Plan to incorporate the TMDLs for dissolved copper, lead, and zinc in Chollas

Creek and to revise the Basin Plan to reference the California Toxics Rule as set forth in Attachment A hereto.

2. **TECHNICAL REPORT APPROVAL:** The San Diego Water Board hereby approves the Technical Report entitled *Total Maximum Daily Loads for Dissolved Copper, Lead, and Zinc in Chollas Creek, Tributary to San Diego Bay*, dated [insert date].
3. **CERTIFICATE OF FEE EXEMPTION:** The Executive Officer is authorized to sign a Certificate of Fee Exemption.
4. **AGENCY APPROVALS:** The Executive Officer is directed to submit this Basin Plan amendment to the State Water Board for approval in accordance with Water Code section 13245. The San Diego Water Board requests that the State Water Board approve the Basin Plan amendment and forward it to the Office of Administrative Law (OAL) and the USEPA for approval.
5. **NON-SUBSTANTIVE CORRECTIONS:** If, during the approval process for this amendment, the State Water Board, San Diego Water Board, or OAL determines that minor, non-substantive corrections to the language of the amendment are needed for clarity or consistency, the Executive Officer may make such changes, and shall inform the San Diego Water Board of any such changes.

*I, John H. Robertus, Executive Officer, do hereby certify the foregoing is a full, true and correct copy of a Resolution adopted by the California Regional Water Quality Control Board, San Diego Region, on [insert date].*

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**JOHN H. ROBERTUS**  
EXECUTIVE OFFICER

**ATTACHMENT A  
TO RESOLUTION NO. R9-2006-0075**

**AMENDMENT TO THE WATER QUALITY CONTROL PLAN FOR THE SAN DIEGO  
BASIN (9) TO INCORPORATE TOTAL MAXIMUM DAILY LOADS FOR  
DISSOLVED COPPER, LEAD, AND ZINC IN CHOLLAS CREEK,  
TRIBUTARY TO SAN DIEGO BAY,**

**AND TO REVISE THE TOXIC POLLUTANTS SECTION OF CHAPTER 3 TO  
REFERENCE THE CALIFORNIA TOXICS RULE**

This Basin Plan amendment establishes a Total Maximum Daily Load (TMDL) and associated load and wasteload allocations for copper, lead and zinc in Chollas Creek, and revises the Toxic Pollutants section of Chapter 3 to reference the California Toxics Rule. This amendment includes a program to implement the TMDL and monitor its effectiveness. Chapters 2, 3, and 4 of the Basin Plan are amended as follows:

**Chapter 2, Beneficial Uses**

***Table 2-2. Beneficial Uses of Inland Surface Waters***

Add the following footnote 3 to Chollas Creek

<sup>3</sup>Chollas Creek is designated as an impaired water body for copper, lead and zinc pursuant to Clean Water Act section 303(d). A Total Maximum Daily Load (TMDL) has been adopted to address this impairment. See Chapter 3, Water Quality Objectives for Toxicity and Toxic Pollutants and Chapter 4, Total Maximum Daily Loads.

**Chapter 3, Water Quality Objectives**

***Inland Surface Waters, Enclosed Bays and Estuaries, Coastal Lagoons, and Ground Waters***

***Water Quality Objectives for Toxicity:***

Add a fifth paragraph as follows:

Chollas Creek is designated as a water quality limited segment for dissolved copper, lead, and zinc pursuant to Clean Water Act section 303(d). Total Maximum Daily Loads have been adopted to address these impairments. See Chapters 2, Table 2-2, *Beneficial Uses of Inland Surface Waters*, Footnote 3 and Chapter 4, Total Maximum Daily Loads.

**TOXIC POLLUTANTS:**

Revise as follows: The USEPA promulgated a final rule prescribing water quality criteria for toxic pollutants in inland surface waters, enclosed bays, and estuaries in California in 2001 (The California Toxics Rule or “CTR;” [40 CFR 131.38]). CTR criteria constitute applicable water quality objectives in California. In addition to the CTR, certain criteria for toxic pollutants in the National Toxics Rule [40 CFR 131.36] constitute applicable water quality objectives in California as well.

Chollas Creek is designated as a water quality limited segment for dissolved copper, lead, and zinc pursuant to Clean Water Act section 303(d). Total Maximum Daily Loads have been adopted to address these impairments. See Chapters 2, Table 2-2, *Beneficial Uses of Inland Surface Waters*, Footnote 3 and Chapter 4, Total Maximum Daily Loads.

~~Federal Register, Volume 57, Number 246 amended Title 40, Code of Federal Regulations, Part 131.36 (40 CFR 131.36) and established numeric criteria for a limited number of priority toxic pollutant for inland surface waters and estuaries in California. USEPA promulgated these criteria on December 22, 1992, to bring California into full compliance with section 303(c)(2)(B) of the Clean Water Act. California is not currently in full compliance with this section of the Clean Water Act due to the invalidation of the Water Quality Control Plan for Inland Surface Waters of California and the Water Quality Control Plan for Bays and Estuaries of California. However, the criteria established in 57 FR 60848 (December 22, 1992) (specifically pages 60920-60921) are still applicable to surface waters in the Region.~~

***Water Quality Objectives for Toxic Pollutants:***

~~*Inland surface waters, enclosed bays, and estuaries shall not contain toxic pollutants in excess of the numerical objectives applicable to California specified in 40 CFR 131.36 (§131.36 revised at 57 FR 60848, December 22, 1992).*~~

**Chapter 4, Implementation**

After the subsection on the TMDL for Dissolved Copper, Shelter Island Yacht Basin, San Diego Bay add the following subsection:

***Total Maximum Daily Loads for Copper, Lead, and Zinc in Chollas Creek***

On **[Insert Date]**, the Regional Board adopted Resolution No. R9-2006-0075, *A Resolution Adopting an Amendment to the Water Quality Control Plan for the San Diego Region to Incorporate Total Maximum Daily Loads for Dissolved Copper, Lead and Zinc in Chollas Creek, Tributary to San Diego Bay*. The TMDL Basin Plan Amendment was subsequently approved by the State Water Resources Control Board on **[Insert Date]**, the Office of Administrative Law on **[Insert Date]**, and the USEPA on **[Insert Date]**.

**Problem Statement**

Dissolved copper, lead and zinc concentrations in Chollas Creek violate numeric water quality objectives for copper, lead, and zinc promulgated in the California Toxics Rule, and the narrative objective for toxicity. Concentrations of these metals in Chollas Creek threaten and impair the designated beneficial uses of warm freshwater habitat (WARM), and wildlife habitat (WILD).

**Numeric Targets**

The TMDL numeric targets for copper, lead, and zinc are set equal to the numeric water quality objectives as defined in the California Toxics Rule (CTR) and shown below. Because the concentration of a dissolved metal causing a toxic effect varies significantly with hardness, the water quality objectives are expressed in the CTR as hardness based equations. The numeric targets are equal to the loading capacity of these metals in Chollas Creek.

Table 4. **[insert number]** Water Quality Objectives/Numeric Targets for dissolved metals in Chollas Creek.

Metal	Numeric Target for Acute Conditions: Criteria Maximum Concentration	Numeric Target for Chronic Conditions: Criteria Continuous Concentration
Copper	$(1) * (0.96) * \{e^{[0.9422 * \ln(\text{hardness}) - 1.700]}\}$	$(1) * (0.96) * \{e^{[0.8545 * \ln(\text{hardness}) - 1.702]}\}$
Lead	$(1) * \{1.46203 - [0.145712 * \ln(\text{hardness})]\} * \{e^{[1.273 * \ln(\text{hardness}) - 1.460]}\}$	$(1) * \{1.46203 - [0.145712 * \ln(\text{hardness})]\} * \{e^{[1.273 * \ln(\text{hardness}) - 4.705]}\}$
Zinc	$(1) * (0.978) * \{e^{[0.8473 * \ln(\text{hardness}) + 0.884]}\}$	$(1) * (0.986) * \{e^{[0.8473 * \ln(\text{hardness}) + 0.884]}\}$

Hardness is expressed as milligrams per liter.

Calculated concentrations should have two significant figures [40 CFR 131.38(b)(2)].

The natural log and exponential functions are represented as “ln” and “e,” respectively.

### **Source Analysis**

The vast majority of metals loading to Chollas Creek are believed to come through the storm water conveyance system. An analysis of source contributions reveals many land uses and activities associated with urbanization to be potential sources of copper, lead and zinc to Chollas Creek. Modeling efforts point toward freeways and commercial/industrial land uses as the major contributors

### **Total Maximum Daily Loads**

The TMDLs for dissolved copper, lead and zinc in Chollas Creek are concentration-based and set equal to 90 percent of the numeric targets/loading capacity.

### **Margin of Safety**

The TMDL includes an explicit margin of safety (MOS). Ten percent of the loading capacity was reserved as an explicit MOS.

### **Allocations and Reductions**

The source analysis showed that nonpoint sources and background concentrations of metals are insignificant, and thus, were set equal to zero in the TMDL calculations. The wasteload allocations are set equal to 90 percent of the numeric targets/loading capacity. Concentrations of dissolved copper, lead and zinc require significant reductions from current concentrations to meet the loading capacity.

### **TMDL Implementation Plan**

Persons whose point source discharges contribute to exceedance of WQOs for copper, lead, and zinc in Chollas Creek will be required to meet the WLA hardness dependant concentrations in their urban runoff discharges before it is discharged to Chollas Creek. Actions to meet the WLAs in discharges to Chollas Creek will be required in WDRs that regulate MS4 discharges, industrial facility and construction activity stormwater discharges, and groundwater extraction discharges in the Chollas Creek watershed. The following orders may be reissued or revised by the Regional Board to include requirements to meet the WLAs. Alternatively, the Regional Board may issue new WDRs to meet the WLAs.

**Order No. 2001-01**, NPDES No. CAS0108758, *Waste Discharge Requirements for Discharges of Urban Runoff from the Municipal Separate Storm Sewer Systems Draining the Watersheds of the County of San Diego, the Incorporated Cities of San Diego County, and the San Diego Unified Port District*, or subsequent superceding NPDES renewal orders.

**Order No. 2000-90**, NPDES No. CAG19001, *General Waste Discharge Requirements for Temporary Groundwater Extraction and Similar Waste Discharges to San Diego Bay and Storm Drains or other Conveyance Systems Tributary Thereto*, or subsequent superceding NPDES renewal orders.

**Order No. 2001-96**, NPDES No. CAG 919002, *General Waste Discharge Requirements for Groundwater Extraction Waste Discharges from Construction, Remediation and Permanent Groundwater Extractioi Projects to Surface Waters within the San Diego Region Except for San Diego Bay* or subsequent superceding NPDES renewal orders.

**Order No. 97-11**, *General Waste Discharge Requirements for Post-Closure Maintenance of Inactive Nonhazardous Waste Landfills within the San Diego Region* or subsequent superceding NPDES renewal orders.

The Regional Board shall request the State Water Resources Control Board amend the following statewide orders:

**Order No. 99-06-DWQ**, NPDES No. CAS000003, *National Pollutant Discharge Elimination System (NPDES) Permit, Statewide Storm Water Permit, and Waste Discharge Requirements (WDRs) for the State of California, Department of Transportation (Caltrans)*, or subsequent superceding NPDES renewal orders.

**Order No. 97-03-DWQ**, NPDES No. CAS 000001, *Waste Discharge Requirements for Discharges of Storm Water Associated with Industrial Activities Excluding Construction Activities*, or subsequent superceding NPDES renewal orders.

**Order No. 2003-0005-DWQ**, NPDES No. CAS000004, *Waste Discharge Requirements for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems*, or subsequent superceding NPDES renewal orders.

**Order No. 99-08-DWQ**, NPDES No. CAS000002, *General Permit for Storm Water Discharges Associated with Construction Activity*, or subsequent superceding NPDES renewal orders.

The Regional Board shall require the U.S. Navy to submit a Notice of Intent to enroll the Naval Base San Diego facility under statewide Order No. 2003-005-DWQ or subsequent superceding NPDES renewal orders .

### **Implementation Monitoring Plan**

The dischargers will be required to monitor Chollas Creek and provide monitoring reports to the Regional Board for the purpose of assessing the effectiveness of the management practices implemented to meet the TMDL allocations. The Regional Board shall amend the following order to include a requirement that the cities of San Diego, Lemon Grove, and La Mesa, the County of San Diego, the San Diego Unified Port District, and CalTrans investigate excessive levels of metals in Chollas Creek and feasible management strategies to reduce metal loadings in Chollas Creek, and conduct additional monitoring to collect the data necessary to refine the watershed wash-off model to provide a more accurate estimate of the mass loads of copper, lead and zinc leaving Chollas Creek each year.

**Order No. R9-2004-0277**, *California Department of Transportation and San Diego Municipal Separate Storm Sewer System Copermittees Responsible for the Discharge of Diazinon into the Chollas Creek Watershed, San Diego, California.*

### **Schedule of Compliance**

Concentrations of metals in urban runoff shall only be allowed to exceed the WLAs by a certain percentage for the first nine years after adoption of this TMDL. Allowable concentrations shall decrease as shown in Table 4. [insert number]. For example, if the measured hardness in year four dictates the WLA for copper in urban runoff is 10 µg/l, the maximum allowable measured copper concentration would be 18.5 µg/L. By the end of the ninth year of this TMDL, the WLAs of this TMDL shall be met. This will ensure that copper, lead and zinc water quality objectives are being met at all locations in the creek during all times of the year.

Table 4. [insert number] Compliance schedule and interim goals for achieving Wasteload Allocations

Compliance Year (year after OAL approval)	Allowable Exceedance of the WLAs (allowable percentage above)		
	Copper	Lead	Zinc
1-3	100%	100%	100%
4	85%	85%	85%
7	50%	50%	50%
8	25%	25%	25%
9	10%	10%	10%
10	0%	0%	0%

Compliance with the interim goals in this schedule can be assessed by showing that dissolved metals concentrations in the receiving water exceed the WQOs for copper, lead, and zinc by no more than the allowable exceedances for WLAs shown in the table above. Regulated

groundwater discharges to Chollas Creek must meet the WLAs at the initiation of the discharge.  
No schedule to meet interim goals will be allowed in the case of groundwater discharges.